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Environmental Accounting Policies and Disclosures, Their Adequacy, and Suggested Improvements

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Abstract

This study of environmental accounting was conducted for three purposes: to describe the current state of environmental accounting, to evaluate the adequacy of existing accounting policies and disclosure regulations, and to suggest improvements that would better meet users' needs concerning environmental accounting information.

The current state of environmental accounting was shaped and formed primarily as a reaction to the environmental movement. Significant events include the establishment of the Environmental Protection Agency (EPA) and the passage of the Superfund laws. These two events, along with other legislation, resulted in the EPA having the duty to identify contaminated sites for cleanup. The EPA also has the power to name Potentially Responsible Parties (PRPs) and to force these PRPs to pay the costs of cleaning up.

The Statement of Financial Accounting Standards Number % (SFAS 5) and the Emerging Issues Task Force Issue Number 90-8 (EITF 90-8) are the major pronouncements serving as guidelines for firms to account for their environmental costs. SFAS 5 states that potential losses should be accrued if they are probable and reasonably estimatable. Otherwise the costs should generally be disclosed.

EITF 90-8 says that environmental costs should generally be expensed unless certain criteria are met. The criteria are an increase in the life or capacity of the property, prevention of future damage, or preparation of the property for resale. If any of these criteria are met, the costs should be capitalized.

Most disclosure requirements are those of the Securities and Exchange Commission (SEC). These regulations formerly required companies to disclose any sites that might result in a Superfund cleanup. Now companies have to report any environmental situation unless they can prove it has no material effect on their financial position.

The current state of environmental accounting is adequate in some areas, but lacking in others. In order to evaluate the adequacy of existing policies and disclosures, the conceptual framework is considered. The objectives of financial reporting, the characteristics that make accounting information useful, and various principles and constraints make up the conceptual framework issued by the Financial Accounting Standards Board (FASB).

Areas that are inadequate when judged for usefulness of information provided include time frames for amortization of capitalized environmental costs and matching; However, allowance accounts provide useful information despite their disagreement with the conceptual framework. As for disclosures, inadequate areas are the lack of required disclosure of PRP status or general environmental policy, and

improper grouping of costs in the financial statements. On the other hand, disclosure requirements for litigation are very sufficient in providing complete information to users.

Other items such as the cost estimation model or counsel/client confidentiality also affect the usefulness or availability of information. There are some suggested improvements that might be able to strengthen these as well as the previously mentioned areas. The suggestions call for action by bodies such as the FASB or the SEC to alter their current standards and regulations or to issue new pronouncements

1.0 Introduction

The explanations and discussions in the following three sections fulfill the purposes of this research. One purpose is to describe the current state of environmental accounting. Another purpose is to evaluate the adequacy of existing accounting policies and disclosures in the area of environmental accounting. The final purpose is to identify possible improvements that would better meet the needs of users of financial information concerning environmental issues.

In achieving these purposes, the environmental movement and the development of current environmental laws and regulations are examined. An examination of the regulations and legislation provides a better understanding of the current state of environmental accounting. The conceptual framework will be covered in order to provide a basis for evaluating the adequacy of the accounting policies and disclosures dealing with environmental costs. Possible improvements are then suggested that would alter the existing policies and disclosure requirements to better serve users of financial information.

Because environmental costs have become a significant concern for many industries and because the present accounting for these costs is less than adequate, this research has been developed to better inform those interested in the issues. As the importance of environmental accounting grows, so should the knowledge of the professionals responsible for its recording and disclosing.

2.0 Current State of Environmental Accounting

2.1 The Development of Environmental Awareness and Legislature

Since the early 1970's, United States consumers, corporations, and legislators have become increasingly more conscious of the environment, its importance, and the ways in which it is treated. The establishment of the Environmental Protection Agency (EPA hereafter) was the first major step in the environmental movement. The EPA was set up to address environmental policies and handle cleanups by identifying sites and organizing cleanup activities. While there are state and local regulations, the first major pieces of federal legislation were the Clean Air Act of 1972 and the Clean Water Act of 1972. These Acts set national air quality standards for selected contaminants and created water quality standards for each industry. Another act, the Resource Conservation and Recovery Act (RCRA hereafter) of 1976 regulates the handling of hazardous waste from creation to disposal, often referred to as "cradle to grave." Congress passed the Hazardous and Solid Waste Act Amendments in 1984 to speed the EPA's progress in cleaning up the environment. These amendments imposed strict requirements on landfills, including a ban on the land disposal of certain hazardous wastes. The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980 and the Superfund Amendments and Reauthorization Act (SARA) of 1986, which together are known as the Superfund laws, make up the legislation that has had the most far-reaching and material

effect on companies for environmental damage. Congress passed the Emergency Planning and Community Right to Know Act in 1986 after the Union Carbide Corporation chemical spill in Bhopal, India. This act requires industries to work with communities to develop plans to keep interested parties aware of the industries' compliance with environmental laws. (Sikich, 16) In the 1990's, recycling became prevalent across the country and President Bush elevated the EPA to a cabinet position. The growing environmental movement pressured standard setting bodies to take action. This collection of legislation was developed, and it has been responsible for the cleanups completed thus far. As the environmental movement and standard setting continues, the collection of legislation will also carry out cleanups in the future. To show the link between these laws and the accounting policies and disclosures of affected companies, the details of the Superfund laws are discussed.

As the most significant legislation to date, the Superfund laws have had the most impact on companies in the area of environmental protection. This legislation, along with others like the RCRA and the Clean Air Act, gives the EPA the power to identify and clean up abandoned or existing waste disposal sites. These laws also give the EPA the power to impose liability on Potentially Responsible Parties (PRPs hereafter) to pay the costs of cleaning up the sites, regardless of which company was at fault or how long ago the damaging activity occurred. (Sikich, 18)

A PRP is any party directly involved in the hazardous waste creation, removal, and disposal cycle. PRPs include the generators of the hazardous waste, who are usually manufacturers, as well as transporters and carriers. These parties are usually firms that remove the materials from the generator's location and transfer it to a licensed hazardous waste dump. The final category of parties that can be named as PRPs is the hazardous waste disposal facilities. These are the firms that operate, maintain, and monitor the dumps. (Newell, 58)

The EPA requires that PRPs bear the costs of cleaning up the sites. Since the EPA is an agency of the Federal government, it has the authority to bring suit against PRPs in court. The courts then grant a judgment forcing the PRPs to pay the fines imposed upon them by the EPA for their damaging activities. Whatever cleanup costs the PRPs cannot pay (or if no PRPs are identified), the EPA pays from its Superfund trust fund. The resources in the government-supported trust fund come from both voluntary and mandated contributions by industries. In order to avoid depleting the fund, the EPA is effective in identifying and collecting from the PRPs by exercising its legislative power to sue companies. The courts often decide a percentage of responsibility when the dollar amount of damage is great or if a large number of PRPs exist. Often the courts follow a "deepest pockets" approach and fine most heavily the party in the best monetary position. The company forced to pay

the costs initially can then attempt to collect from the other PRPs for their share by suing them in court. (Sikich, 16) These fines and lawsuits result in large dollar amounts of definite losses and liabilities, as well as significant contingencies, that the companies have to record and disclose.

2.2 Current Environmental Accounting Pronouncements

Companies affected by environmental issues through their identification as PRPs have guidelines and requirements to follow to ensure proper accounting procedures and disclosures. The general guidelines found in the Statement of Financial Accounting Standards No. 5 (SFAS 5 hereafter), Accounting for Contingencies, and the Financial Accounting Standards Board Emerging Issues Task Force Issue No. 90-8 (EITF 90-8 hereafter), Capitalization of Costs to Treat Environmental Contamination, are the most important accounting pronouncements that deal with environmental issues. This is due in part because there are few accounting pronouncements that directly address the recognition and measurement of environmental liabilities. Companies also have to meet disclosure requirements of the Securities and Exchange Commission (SEC hereafter).

2.2.1 SFAS 5

In 1975, when the environmental movement was spreading and affecting more companies, the Financial Accounting Standards Board issued SFAS 5 to increase the consistency in accounting

for and reporting of loss contingencies. According to SFAS 5, a contingency is "an existing condition, situation, or set of circumstances involving uncertainty as to possible gain or loss to an enterprise that will ultimately be resolved when one or more future events occur or fail to occur." (Winn, 24) A company's damage to the environment and its subsequent responsibility for cleanup could result in a contingent loss and liability under this definition. The appropriate accrual and disclosure policies for contingencies according to guidelines of SFAS 5 have two facets. The first facet is the ability to reasonably estimate the dollar amount of the loss, and the second facet is the likelihood of the event occurring or failing to occur in the future. (Winn, 25)

The first facet of estimating the amount of the loss is very complex. Often the opinions of professionals other than accountants, such as environmental consultants, lawyers, and engineers, are relied upon to estimate approximate dollar amounts or at least ranges of what the costs of cleanup might be. (Graham, 20) In order for a contingent liability and loss to be recognized under SFAS 5, the dollar amount must be reasonably estimatable. If a single number cannot be determined, any number more likely than other numbers in a range should be the one used as the amount of loss or liability. If no number is any better than any other number in the range, then the minimum amount in the range should be used. (Simon, 16) Besides consultation with experts, there are steps

to be followed that, if applied properly, provide fairly accurate amounts of how much cleanup costs or other related environmental costs will be. (Graham, 20) These steps involve detailed examinations of the contaminated sites.

The second facet involving contingent losses and liabilities concerns the likelihood of a future event's occurrence. The event in question will eventually resolve the uncertainty surrounding the situation or circumstances. An example of a future event that would resolve uncertainty is the EPA's decision to name a company as a PRP. Likelihood can be categorized as probable, reasonably possible, or remote. In order for an amount to be accrued, the event's probability is as important as its estimatability. For a loss and a liability to be recorded in the books and to appear in the financial statements, the likelihood of the event must be probable and the amount must be estimatable. If a loss is not probable, but reasonably possible, it should not be accrued but disclosed in the notes to the financial statements. According to SFAS 5, the note should describe the nature of the contingency and contain the estimated amount. If an amount cannot be estimated, this should be stated. If the occurrence of the event is remote, no accrual or disclosure is required. (Winn, 25) These guidelines established in SFAS 5 address both the accounting and disclosure aspects of contingencies. The set of guidelines found in the EITF 90-8 focus on the accounting

aspects of environmental costs, while the SEC requirements deal solely with the disclosure aspects.

2.2.2 EITF 90-8

EITF 90-8 is the other prominent accounting pronouncement for environmental costs. The issue of environmental accounting is expected to increasingly affect firms as they incur environmental treatment costs. Environmental treatment costs are those incurred to remove, contain, neutralize, or prevent existing or future environmental contamination. They include removal costs, equipment acquisition costs, costs of environmental studies, and costs of fines for violations of environmental laws. (Levitin, 96) EITF 90-8 deals with the following accounting problem: Should the costs incurred to treat contamination be capitalized or charged to expense?

EITF 90-8 states that a distinction be made between betterments, which would be capitalized, and repairs, which would be expensed. The EITF reached a general consensus that environmental treatment costs should be charged to expense, but may be capitalized under the condition that the costs are recoverable, and that one of three criteria are met. Recoverable refers to costs that can be offset through revenues or gains related to the costs incurred. The three criteria are:

> Criteria 1. The environmental treatment costs incurred must extend the life, increase the capacity, or improve the efficiency and/or safety of company-owned property. A part of this criterion is that the property's condition after cleanup must be improved

compared to the condition of the property when constructed or when acquired.

Criteria 2. The costs must prevent or lessen contamination that has yet to occur. This criterion also requires that the property's condition after cleanup be improved compared to its condition at acquisition or construction.

Criteria 3. The costs must be incurred to prepare property that is presently for sale. (Levitin, 96)

If the costs are recoverable and at least one of the above criteria are met, the environmental treatment costs may be capitalized. The EITF 90-8 does not provide companies with guidance on amortization details such as time frames for initial recording, periodic amortization, salvage values, or useful life categories.

The logic behind EITF 90-8 was developed through the EITF's previous experience in dealing with the costs of environmental treatment. EITF 89-13, Accounting for the Cost of Asbestos Removal, stated that the costs incurred to remove or contain asbestos could be capitalized as a betterment project. (Levitin, 96) EITF 90-8 is the final result of the EITF's discussion of three main arguments proposing ways of dealing with environmental treatment costs. The two arguments that did not prevail were completely opposite views on the problem of expensing versus capitalization. One argument was for all costs to be expensed. The removal and treatment of asbestos or damage to the environment should be viewed as a repair rather than a betterment. The costs merely restore the land or the building to a safe condition. The opposing

argument was for all costs to be capitalized because the land or building is in better condition than they were when the removal process was initiated. What the EITF actually decided on was the third argument, which was comparable to a compromise between the other two views. (Levitin, 96)

2.2.3 SEC

In addition to SFAS 5 and EITF 90-8, companies have other guidelines to follow and requirements to meet for environmental information. The SEC first filed action against companies for improper disclosure of environmental information in 1977. The SEC filed suit against Allied Chemical Corporation for not disclosing to shareholders possible material liabilities caused by discharging toxic chemicals. In the area of disclosures, the SEC expanded its corporate reporting requirements after coordinating its efforts with the EPA in 1989. Before this recent expansion, corporations were required to specifically identify sites and environmental costs that could result in Superfund cleanups. Due to the 1989 increased SEC requirements, corporations must disclose all environmental liabilities unless they can prove that the information will not have a material effect on the corporation's financial position or on a reasonably prudent investor's decision. (Winn, 26)

The SEC requirements include compliance with Regulation S-X, which is concerned with the basis for determining the value of equipment and property. Although environmental costs are generally expensed per EITF 90-8, under certain

circumstances the costs may be capitalized. Regulation S-X requires that this necessary information be disclosed. (Winn, 26)

According to the newly enacted SEC Regulation S-K, item 101, companies are required to disclose the material effects that compliance with environmental legislature and regulations may have on capital expenditures, earnings, and the company's competitive position. Item 103 of the regulation deals with disclosures of litigation and potential legal proceedings. This item requires specific disclosure of litigation information such as a suit brought by the EPA, but does not require general information such as PRP status to be disclosed. (Winn, 26)

The SEC also requires various disclosures through S-1, S-2, S-11, and the 10-Q and the 10-K forms. SEC members have to disclose estimated capital expenditures that are material for the current year or succeeding years. The Management Discussion and Analysis (MD&A) section of the 10-K and 10-Q reports requires known trends to be discussed, although it does not require mention of environmental issues specifically. Despite the many specific disclosures required by the SEC, a company is not required to disclose its general environmental policy. (Winn, 26)

2.3 Summary

The current state of accounting disclosures and policies has been formed indirectly by the environmental movement. The

environmental movement has shaped legislation and regulations of standard setting bodies. Legislation includes most notable CERCLA, or the Superfund laws. Significant standards include the guidelines and requirements of the FASB, the EPA, and the SEC, such as SFAS 5, EITF 90-8, SEC Regulations and others. These pronouncements and regulations are adequate and effective in meeting the objectives of accounting in some areas. However, there are some questions as to the adequacy of the disclosure and accounting requirements in other areas. The discussion of the inadequacies and strengths of existing accounting policies and disclosures in the next section will help clarify this issue. Each accounting policy and disclosure requirement is examined in regard to the conceptual framework of accounting. The adequacy of each is judged by how closely it relates to the framework.

3.0 Evaluation of the Adequacy of Existing Policies and Disclosures

A discussion of the conceptual framework has clarified the relevant concepts that will be used in evaluating environmental accounting policies and disclosures. This framework forms a basis so that the various issues in the accounting for and disclosing of environmental effects can be discussed and evaluated for adequacies and weaknesses.

3.1 Conceptual Framework

The conceptual framework was developed by the Financial Accounting Standards Board and issued in the Statements of

Financial Accounting Concepts (SFACs hereafter) 1 through 5. This framework serves as a basis for financial accounting and has several levels. The first level consists of the objectives of financial reporting, which are the goals and purposes of accounting. At the second level are the qualitative characteristics that make accounting information useful and definitions of financial statement elements such as assets and liabilities. At the third level are the measurement and recognition concepts that are used for establishing and applying the accounting standards.

3.1.1 Objectives of Financial Reporting

The objectives of financial reporting discussed in SFAC 1 establish a foundation for financial accounting. The objectives are to provide information that is:

(1) useful in making investment and credit decisions,

(2) useful to present and potential users such as creditors and investors in assessing the amount, timing, and uncertainty of future cash flows, and

(3) about economic resources, claims to those resources, and changes in them.

These objectives assume that users will have a reasonable understanding of the information contained in the financial statements. Information that meets these objectives will allow users to make investing or lending decisions with knowledge of the environmental practices of the companies.

3.1.2 Qualitative Characteristics

The second level of the framework, discussed in SFAC 2 and SFAC 3, contains the qualitative characteristics of accounting information and definitions of financial statement elements. Of primary importance to this research is SFAC 2, which describes the qualities of accounting information.

Providing information that is the most useful for decision making is the most important aspect of financial accounting and reporting. The primary qualities that make information useful are relevance and reliability. Relevance is the quality of information that makes it capable of making a difference in a decision. The concept of relevance includes the aspect of timeliness, which means that the decision makers must have the information before the information's capability to influence their decision is lost. For information to be reliable, the other primary quality, it must be reasonably free from error and bias, and fairly represent the accounting transactions that occurred. Accounting information should also have comparability and consistency. (Kieso, 30) These characteristics result in accounting information that better reveals environmental issues to users by identifying liabilities and losses that might not be as evident if these characteristics were not present.

3.1.3 Principles, Constraints, and Assumptions

Twelve principles, constraints, and assumptions make up the measurement and recognition concepts level of the conceptual framework. Of these, certain concepts pertain to the evaluation of environmental accounting and disclosures more than others. These include the principles of matching and full disclosure, and the constraints of materiality, cost-benefit, and conservatism. A brief explanation of each of these concepts as discussed in SFAC 5 aids in understanding the environmental issues' adequacies and weaknesses.

The matching principle states that costs should be expensed in the period in which they contribute to the generation of revenues. The full disclosure principle emphasizes the importance of providing information that could influence an informed user. The constraint of materiality means that an item must be significant enough to influence a reasonable person's judgment. The relationship of cost versus benefit shows that the benefits received from having the information must outweigh the costs of obtaining it. Finally, conservatism provides accountants in difficult situations with the guidance that the solution least likely to overstate income or assets should be chosen. (Kieso, 33) These principles, constraints, and assumptions combine to make environmental information more useful to parties who rely on such information.

3.2 An Evaluation of the Issues

Each environmental accounting policy and disclosure requirement discussed and evaluated based on how it provides useful information. Accounting policies refer to the recording of the transactions on the books and in the financial statements, while disclosures generally refer to the notes to the financial statements. To judge the usefulness of information, each issue's relation to the objectives of financial reporting, qualities of information, and the measurement and recognition concepts of the conceptual framework is examined.

3.2.1 Accounting Policies

Some areas of environmental accounting have no methods established or the policies established are lacking either in conceptual support or in completeness of detail. However, some of the policies currently in effect provide clear and adequate guidance to firms on how to account for their environmental costs.

One of the areas in which policies are inadequate is the area of time frames for the recognition of the environmental costs incurred by companies. EITF 90-8 states that costs incurred should usually be expensed unless they meet one of the criteria established by the FASB task force, in which case they should be capitalized. Briefly, those criteria are that costs must be recoverable and that they improve the usefulness of

property, prevent future damage-related costs, or prepare property for resale. So while capitalization of costs has been established in certain cases by EITF 90-8, no guidance has been provided as to what period to capitalize the costs over.

One reason for the lack of guidance in this area is that the determination of useful lives of many properties by management is too subjective, and could potentially mislead the users of the financial information. Classes of useful lives, such as those found in the Modified Accelerated Cost Recovery System (MACRS), have not been established. Also the useful life approach cannot be used for costs incurred related to land, such as readying land for sale, because land is not amortized. If these costs are to be capitalized, firms need to do so in a consistent manner. An example of this time frame problem would be the amortization of the costs of cleaning up land contaminated from leaking underground fuel tanks of a service station that is to be resold. These costs meet the requirements for capitalization, but the company selling the lot has no guidance as to what periods over which to amortize the costs because land is not amortized. (Price Waterhouse, 15)

Another area that is questionable as to its adequacy is how the matching principle is being applied to these environmental costs. While matching states that costs should follow the revenues they generate, many companies will expense huge costs in a single period that may or may not be the appropriate revenue-earning period. This is the position held

by the EITF in its Issue No. 90-8 if the costs do not qualify for capitalization. If the damage to the environment occurred from discharging pollutants during production over the course of many years, it can be argued that costs of cleaning up are not matched with revenues if expensed in one period. Related to this issue of matching is the time frame question of the appropriate period to recognize the expense discussed above.

There are arguments for costs to be expensed in the period when they are initially discovered, when the cleanup costs are paid (cash basis accounting), or retroactively in the period(s) damage occurred. Proper matching would be to match current costs with past revenues. However, retroactive reporting would be extensive, and might result in current period financial statements not reflecting the full extent of the losses the companies are actually facing in the present (i.e., cash flow consequences). SFAS 5 provides for the recognition of contingent losses and liabilities in the period that costs are probable and estimatable, but this does not solve the problem of matching expenses with the appropriate revenues, nor does SFAS 5 address costs already incurred.

An example of the matching principle applied appropriately would be the recording of the costs of maintaining emissions control filters on smokestacks in a steel mill in the period that the steel produced generated revenues. These costs could be identified with the steel as product costs and inventoried like other variable overhead. As for costs related to many

periods of revenues, such as the initial purchase and installation of the filters, EITF 90-8 allows for capitalization to better match those costs.

An example of the problems with matching is the EXXON Valdez case, where the $850 million cleanup cost was charged to one quarter. While this follows EITF 90-8, this does not match the costs with the revenues EXXON earned over the years without a spill. (Rubenstein, 42) There is a important trade-off between matching costs with revenues and providing misleading information. If the recording of the $850 million in costs is proper matching, then the usefulness of the information must be weighed and considered. These costs reported in one quarter almost completely offset that quarter's earnings, which might be misinterpreted by stockholders, creditors, and other users of financial information. This problem of matching expenses with revenues is one of the foremost areas of concern for financial accounting standards setters, such as the FASB.

An accounting policy found in practice that does not meet the ideals in the conceptual framework but may provide useful information regardless is the establishment of allowance accounts for properties. These allowance accounts are for costs that will be incurred upon the sale of the land, building, equipment or other asset, and are similar to the allowance for doubtful accounts account. These are not similar to the allowance accounts for accumulated depreciation as they are not an allocation of the cost of the asset. Instead they

are costs the company knows will be incurred before sale can occur, such as the costs of site investigation and cleanup procedures. Accounting for and reporting of these assets net of these allowance accounts in effect means accounting for and reporting them at net realizable value. While this violates the historical cost principle found in the conceptual framework, it results in information that is more useful to decision makers. (Rubenstein, 42)

3.2.2 Accounting Disclosures

The accounting disclosure requirements in existence are generally enforced by the SEC, usually through the SEC filing lawsuits against companies for inadequate compliance with disclosure regulations. The SEC sued Allied Chemicals in 1977 for not disclosing to shareholders potential material liabilities caused by toxic chemicals being released into the environment. The SEC also sued U.S. Steel for not disclosing the material costs of complying with environmental regulations in 1979. Occidental Petroleum Corporation was sued for not disclosing pending litigation and liabilities in 1980. These suits by the SEC in the late 70's and early 80's were a reaction to the environmental movement and legislative development, and established the SEC as a main authority on environmental disclosures. The SEC's enforcement has sent a message that corporations have a duty to disclose regardless of the uncertainty surrounding environmental issues. (Winn, 26)

The disclosure requirements currently in place have both strong and weak areas when judged against the conceptual framework. Some requirements are not considered adequate for they fail to agree with the ideals presented in the conceptual framework, particularly the full disclosure principle. One of these areas involves the lack of disclosure for corporations named as PRPs. If properly disclosed, this information is relevant because it is capable of making a difference in a user's decision making process, such as the decision to purchase the corporation's stock or to advance credit to the corporation. It is also reliable since being named as a PRP comes from an external source, the EPA. However, the full disclosure principle, which states that information considered relevant and useful should be disclosed, is not satisfactorily met without a requirement to disclose PRP status. (Winn, 26)

Another inadequacy is that companies' general environmental policies are not required to be disclosed. The SEC requires the Management's Discussion and Analysis section of 10Q and 10K Reports to analyze "known trends," but does not require disclosure or discussion of environmental issues specifically. Known trends also include "known demands, commitments, events, or uncertainties that will result in or are reasonably likely to result in the registrant's liquidity increasing or decreasing in any material way." (Winn, 26) Here materiality refers to the magnitude of effects on the corporation's financial position, credit rating, stock price,

etc. While the environmental issues faced by the affected companies are usually significant enough to warrant disclosure in this section, the requirement is subjective and there are varying interpretations of what needs to be disclosed. Management of most companies realize that while voluntarily reporting a large loss could improve its public image, it is also likely to affect its stock's market price potentially in a negative way. Therefore, management might be reluctant to disclose more information than what is specifically required.

Another disclosure issue with inadequate guidelines is the classification of costs on the financial statements. Often environmental costs are lumped together with operating expenses or in other revenues and expenses. Firms also reported that they usually do not segregate the costs related to discontinued operations from the others, so these too are grouped in with an inappropriate account. (Spearot, 20) This may result in distortions of elements of the financial statements.

One of the areas in which the disclosure requirements appear to conform to the conceptual framework's ideals is the area of disclosing legal proceedings. Generally, if a company is sued for negligence or other claims, the SEC does not require the company to describe the proceedings unless there is a deviation from the normal kind of such actions. The SEC considers legal proceedings related to environmental damage as a deviation from ordinary routine litigation and must be described if one of the following are met:

(1) The proceeding is material to the business's condition,

(2) The charges in the proceedings exceed 10 percent of current assets, or

(3) An agency or authority of the government is involved in the proceedings and there are possible fines or other monetary sanctions expected to exceed $100,000. (Winn, 26)

Since virtually all litigation initiated by the EPA or the SEC meet the above criteria, the requirements are such that the nature of environmental proceedings will be properly disclosed.

3.2.3 Other Related Areas

Besides accounting policies and disclosures, there are other factors concerning environmental accounting that contribute to or hinder the usefulness of accounting information. One of these is the process of estimating costs of cleanup either for internal management purposes or for contingent loss/liability recognition reasons. The process consists of five phases, which provide a more accurate estimate at each phase. Phase One is the assessment audit, where work done includes interviews, site walks, and some minor sampling. Phase Two is investigation of the facility or site, where extensive sampling occurs and maximum allowable levels of contaminants are compared. Phase Three is the selection of various alternatives of cleaning up and an evaluation of each method. In Phase Four a conceptual design of the method selected in Phase Three is developed. This includes identifying step-by-step procedures, which are then compared to

EPA price lists in Phase Five, the cost estimation phase. This entire process is effective in estimating costs to within 15 percent of actual costs if the phases are executed carefully and correctly. (Graham, 23)

There are more regulations for disclosures emerging all the time. While this increase raises the costs and complexity of compliance, it is beneficial in increasing the reliability and relevance of accounting information. Besides the crackdown by the SEC and other governmental agencies, banks and commercial lenders are starting to be indirect enforcers of the laws as well. Banks require potential borrowers to investigate the property to be purchased thoroughly before the bank will approve the loan. Because the banks might become owners of the property through default, they want to meet the "innocent landowners" qualification that they made all appropriate inquiries. This is one of the rare defenses allowed to owners of contaminated property that keeps them from being liable for cleanup costs. (Graham, 20)

Another issue that warrants consideration might result in material misstatement of the financial statements, and arises from a loophole made possible by the legal profession. If a company is engaged in an environmental audit to satisfy EPA regulations, the results of the environmental audit do not have to be disclosed to the regulatory agencies or to the public if the lawyer was responsible for retaining the audit team. This is because of the client-counsel confidentiality privileges.

This allows firms to comply with the inspection part of the laws but might not result in action being taken to correct problems unless the EPA inspects the company independently at increased costs. (Grant Thorton, 6)

There is also the problem of accountants considering and reporting environmental costs as "immaterial" or as "covered by insurance." Since the SEC laws now require any environmental cost to be disclosed unless immateriality can be justified, this practice is on the decline, for accountants do not want to be sued for fraudulent information. Some companies record their liabilities net of expected insurance recoveries, but most of the litigation indicates that comprehensive insurance policies will not be responsible for environmental costs. This results in the understatement of liabilities, which again could result in litigation being brought against the accountants. (Price Waterhouse, 10)

While the cost estimation model described previously is very effective in approximating accurate costs, there are some areas where cost estimation is just too difficult for a meaningful estimate to be made. Sometimes in these cases there is no disclosure of pending litigation, and the users of the financial statements do not find out about it until the company is being sued. Since this information then lacks timeliness, it loses its relevance to users, and users are forced to make quick decisions with limited information. An example is stockholders who try to sell their stock in a corporation to a

market who has heard the same news of a lawsuit as the stockholders.

A final problem to be considered is the short-term bottom line focus of many companies. The costs of compliance are high and can harshly affect the companies' net income. Managements that take steps to reduce pollution and their firm's expenses over the long run incur some significant costs along the way. Corporations who comply completely and who voluntarily disclose the full effects of environmental issues may find an improved public image and free "good press" advertising or may suffer from lost sales, decreased supply of credit, higher insurance rates, and lower market values of issued stock. These negative outcomes might be the reasons why there is not more voluntary disclosure on the part of companies.

3.3 Summary

The current state of accounting for environmental costs has been discussed, as well as the adequacy of current accounting policies and disclosures. These were evaluated according to their relationship to the conceptual framework. Based on this evaluation, several areas with deficiencies either in the accounting policies or the disclosure requirements were identified. The next section expands the understanding of these problems and recommends solutions or improvements to better meet users' needs by improving the quality of information provided.

4.0 Possible Solutions and Improvements

4.1 Solutions and Improvements in Accounting Policies

Companies account for environmental costs according to various accounting policies. As previously explained, these policies are sometimes inadequate. There are possible alterations that could improve the usefulness of the information generated for users. There are also possible improvements for the disclosure requirements, and they too will be examined.

4.1.1 Time Frames

The problem concerning time frames arises from incomplete guidance or accounting policies for accountants to use when capitalizing environmental costs. As explained, these costs are usually expensed, but may be capitalized if one or more of the criteria in EITF 90-8 are met. For environmental costs that qualify for capitalization, companies have no consistent manner of amortizing the costs. This damages the comparability of financial statements and could mislead a reasonably prudent investor.

One of the various amortization methods currently in use recognizes a portion of the capitalized amount as expense based on the useful life of the related property. While on the surface this seems theoretically correct, this method of amortization has problems, such as which item of property is the appropriate one to be associated with the costs. An

example would be the steel mill that installs new filters in the smokestacks. The uncertainty is whether to amortize over the useful life of the filters, the smokestacks, or the building that houses the steel mill. Another problem is the determination of useful lives. This is a subjective and often complex process and management might not establish appropriate unbiased useful lives. Yet another issue is those items that have no appropriate useful lives, such as land or discontinued operations. An example mentioned previously is amortization of the costs of cleaning up the ground of the service station to prepare it for resale. These costs qualify for capitalization, but the time frame to allocate the costs to is unclear. Land is not considered to decline in value and therefore has no limit to its useful life. The service station building is to be sold so its useful life is practically over.

There are possible solutions to this problem of inconsistent time frames for capitalization. One suggestion is for the FASB to create classes of useful lives for machinery, buildings, or other property related to the cause of the environmental costs. These classes of useful lives would be similar to those found in MACRS and used for depreciation. This solution would bring consistency to the capitalization of environmental costs. Another suggestion is for an arbitrary amount to be selected as a maximum amount of time for full amortization to take place. This idea is similar to the 17-year limit for patents, the 40-year limit for goodwill, and

others. This method would allow for quicker amortization if a time frame, such as useful life, is more appropriate than the maximum limit. This solution could also be used for those situations like land or discontinued operations where no useful life is appropriate. Finally, a combination of these two solutions might solve the time frame problem. For example, in the smokestack situation presented earlier, the useful life of the related property, the filters, would be used. This would achieve full amortization of the costs of the filters and their installation by the time new filters were needed. For situations similar to the service station scenario, an arbitrary amount such as 40 years should be used as an amortization time frame to rectify the lack of useful life of the land or the building. Any type of amortization policies developed must be both rational and systematic.

These solutions might improve the usefulness of the information appearing in the financial statements. Users made aware of the amortization policies by disclosures required by the FASB or the SEC could compare firms without the uncertainty of the capitalization amounts and would have more faith and confidence in financial information.

4.1.2 Matching

The nature of environmental costs is such that it creates a conflict between matching and usefulness of information. In order to match costs with the appropriate revenues generated, the revenues related to the costs must be identified. This can

be difficult in many environmental situations. However, in a manufacturing situation, the matching process is easier to visualize. For example, suppose the manufacturing process of XYZ Company, a producer of cleaning chemicals, produced one milliliter of hazardous waste chemicals per container of product. The handling and disposal costs of the hazardous waste could be included in overhead and be treated as a product cost that is inventoried just like the cost of factory electricity. Matching would occur when the units of chemicals are sold and cost of goods sold is recorded in the period the product contributed to the generation of earnings.

The problems involving matching and misleading information occur when the appropriate revenues related to the costs cannot be identified. An example is an oil spill like the one that occurred in the EXXON Valdez accident. Under normal circumstances, the regularly-incurred shipping costs are reflected in the price of the oil like in the manufacturing case described above and matched with the appropriate revenues as oil is sold. However, the cost of cleaning up a major oil spill is not a normal cost incurred in the production or sale of oil, so it is not reflected in the oil's price. Since the oil spilled, no revenues are ever generated from that particular oil. The question becomes how to match the cleanup costs with revenues if the costs do not appear to ever contribute to the generation of revenues.

The current guidance for accounting for these costs comes from EITF 90-8, and states that unless the costs qualify for capitalization, they should be expensed in the period incurred. Accordingly, the handling and disposal costs of the hazardous waste produced by the chemical company are not tied with the product but are expensed in the period. While not in accordance with the principle of matching, since this is likely to be a fairly constant situation, the chances of materially misstating income or misleading users are slight. However, in instances like the EXXON Valdez, where $850 million in cleanup costs were expensed in a single period, the potential to mislead a reasonably prudent user of the financial information is clearly significant. The EITF's general policy of expensing creates matching and quality of information issues that are among the most significant of the issues raised by environmental accounting.

One way these costs could be accounted for to help relieve the matching inconsistencies and information usefulness problems currently found is based on cost accounting concepts. A parallel can be found in manufacturing, where the costs of normally occurring spoilage is added to the product's unit cost and is properly matched with revenues. Conversely, abnormal spoilage is treated as a period cost and expensed in the period in which the costs are incurred, not in a period based on the generation of revenues. The suggested solution is to not treat all environmental costs as abnormal as is presently the method.

The costs of the hazardous waste produced by the chemical manufacturer could be tied to the product and inventoried to meet and fulfill the matching principle. The rare occurrences like oil spills could be distinguished from normally occurring costs like the segregation of abnormal spoilage and expensed as is the current policy. For normally occurring costs, this solution provides for better matching than what is currently found in practice. For the rare and abnormal costs, they would still be expensed in the period incurred, which is appropriate when no related revenues can be identified.

This treatment has disadvantages along with the already-mentioned positive aspects, while it would improve the matching of both normally and abnormally occurring environmental costs, the information on abnormal situations, unless properly disclosed, could still be just as misleading. Moreover, the treatment of normally occurring costs as product costs has a primary disadvantage in that it tends to hide the total costs of environmental damage and might not serve as a deterrent for companies to eliminate environmental damage. Management might eventually view the costs as "normal" or necessary like overhead, and that would be detrimental to the EPA's efforts.

Until a better treatment of these costs evolves, the EITF's issue should stand as appropriate guidance. There are some disadvantages such as the possibility for misleading users of information users, but the existing solution apparently does provide matching.

4.1.3 Grouping of Items in the Financial Statements

The problem of companies grouping continuing environmental cleanup costs together with other revenues and expenses or with discontinued operations requires separating these costs for users as a solution. One way to accomplish this would be for the FASB to require environmental losses to be shown as extraordinary items on the income statement. This would be regardless of the criteria of unusual and infrequent. This treatment is similar to the treatment of early extinguishment of debt, which is always shown as extraordinary.

4.1.4 Allowance Accounts

Because of the lack of GAAP pronouncements in the area of environmentally related costs, many entities have independently created various methods to account for these costs. One procedure that has developed in practice is the use of allowance accounts. These are contra accounts for property that will require cleanup before it can be transferred or sold. The amounts in the allowance accounts approximate the total cleanup costs that will be incurred sometime before the property is removed from the books.

Use of these allowance accounts violates the historical cost principle of the conceptual framework. Assets such as equipment or land are not reported at original cost if shown in the financial statements net of an allowance account. These allowance accounts are not similar to those like accumulated depreciation accounts because the amount in the allowance

account is not the amortization of the asset. The allowance accounts are more similar to the contra account to accounts receivable, specifically an allowance for bad debts. The rationale followed by companies that use allowance accounts is that the asset is being reported at its net realizable value. While this is acceptable by GAAP as the appropriate conservative method for accounts receivable despite the contradiction of the historical cost principle, use of allowance accounts for environmental costs is not as readily justified. Besides contradicting the historical cost principle, another major opposition to this method is that reporting the assets net of the allowance accounts permits companies to obscure the magnitude of their environmental problems. This can be done by firms improperly estimating allowance accounts. Another argument is that in order for the costs to be recorded in the allowance account they need to be estimatable and companies consider them as probable to be incurred before sale, the costs meet the criteria under SFAS 5. Therefore, the costs should be reported as a liability rather than a contra asset.

A solution for this problem is GAAP pronouncements that more clearly advocate the recognition of a liability under SFAS 5 and denounce the use of the contra asset allowance accounts. In light of the opposing arguments against the use of allowance accounts, the methods used in practice should be modified to better meet GAAP. An alternate compromise solution

would be to use the allowance accounts only if they were required to be reported separately and not shown net. While this would still not be properly recorded as a liability, it would preserve the historical cost, show net realizable value, and draw attention to the magnitude of expected costs rather than conceal them if the allowance account were properly named.

4.2 Solutions and Improvements in Accounting Disclosures

4.2.1 PRP Status

A suggestion that would better satisfy the full disclosure principle that current practice is to require disclosure of a company's or a company's subsidiary identification by the EPA as a PRP. This information is not currently required to be disclosed, but doing so would serve users of the financial statements with higher quality, more complete information. PRP status is information that is relevant and could influence a reasonably prudent user. The suggestion is for the SEC to require, upon being named a PRP, a footnote stating the company's status, the nature of damage at the contaminated site, and the number of other parties named as PRPs. The disclosing footnote should also include a definition of what a PRP is and what PRP status entails. The footnote should also contain a percentage of responsibility, unless it has not yet been determined by the courts. In that case this should be stated. This solution would provide better information without overemphasizing a company's yet-to-be-determined position.

4.2.2 General Environmental Policy

Since a company's general environmental policy is not required to be disclosed, users of financial information cannot obtain a reliable understanding of a company's attitude toward environmental issues. Management's Discussion and Analysis section of annual reports discusses "known trends," but does not specifically address environmental issues. The environmental issues faced by affected companies are usually significant enough that disclosure should be made here, but the requirement is subjective. Often environmental general policies are not disclosed unless voluntarily by management. Management of most companies realize that while voluntarily reporting a large loss and liability could improve its public image, it is also likely to affect its stock's market price in a negative way. Therefore, management are usually reluctant to disclose more information than what is specifically required.

A solution for this is to modify the SEC's requirements to include at least a brief description of a company's attitude and plans for the environmental issues in the annual report. While this description might not be objective or verifiable, it is at least as reliable as the other information contained in the annual report. A better solution might be for the SEC to require a detailed five-year plan in the annual report that includes management's attitude toward its environmental issues. The disclosures should also include what management intends to

do about cleanup of existing sites, as well as prevention plans for the future.

4.2.3 Classification

The classification of costs on the income statement is an area without specific requirements. While these costs may not meet the unusual and infrequent criteria to be shown as extraordinary losses, they should be segregated, especially because of the often large dollar amounts of cleanup. Without adequate requirements for classification, environmental costs can be buried in with operating expenses or in other expenses. A requirement to classify environmental costs separately from other costs would highlight the total amount, and prevent commingling of discontinued operations losses with operating expenses.

Also under the issue of classification is the problem of costs being considered immaterial or assumed to be covered by insurance policies when in fact the costs are material and most insurance policies will not cover environmental costs. This is on the decline, as the SEC currently requires disclosure of any costs that might have a material effect on a company's liquidity, so to avoid lawsuits many accountants might lower materiality levels where environmental costs are concerned. A recommendation to further reduce this problem is stricter enforcement of regulations by the SEC, and increased publication about the insurance coverage conditions. By making the accounting profession more aware of the litigation results

evaluate the adequacy or inadequacy of existing accounting policies and disclosures in the area of environmental accounting. The final purpose is to identify improvements necessary to better meet the needs of users of financial information concerning environmental issues.

In accomplishing these purposes, the environmental movement and the development of current environmental laws and regulations was discussed. The current state of accounting disclosures and policies was explained through the examination of the regulations and legislation. The conceptual framework was inspected to provide a basis for judging the adequacy of various accounting policies and disclosures. Finally, improvements were suggested to alter the policies and disclosure requirements to a form that would better serve users of financial information.

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